

## **RAW SEQUENCE LISTING**

**The Biotechnology Systems Branch of the Scientific and Technical  
Information Center (STIC) no errors detected.**

Application Serial Number: 10/588, 445  
Source: JFWP  
Date Processed by STIC: 08/17/2006

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IFWP

## RAW SEQUENCE LISTING

DATE: 08/17/2006

PATENT APPLICATION: US/10/588,445

TIME: 15:22:17

Input Set : A:\00952-04,Herr-Paint Seq. Listing.U.S.ST25.txt

Output Set: N:\CRF4\08172006\J588445.raw

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3 <110> APPLICANT: University of Virginia Patent Foundation
4     Gilmer, Linda
5     Mandal, Arabinda
6     Wolkowicz, Michael
7     Klotz, Kenneth
8     Herr, John
10 <120> TITLE OF INVENTION: Compositions and Methods for Identifying and Isolation Sperm
for
11     Forensic Applications
13 <130> FILE REFERENCE: 00952-04
C--> 15 <140> CURRENT APPLICATION NUMBER: US/10/588,445
C--> 15 <141> CURRENT FILING DATE: 2006-08-04
15 <150> PRIOR APPLICATION NUMBER: 60/542,499
16 <151> PRIOR FILING DATE: 2004-02-06
18 <150> PRIOR APPLICATION NUMBER: PCT/US2005/003910
19 <151> PRIOR FILING DATE: 2005-02-07
21 <150> PRIOR APPLICATION NUMBER: 60/581,945
22 <151> PRIOR FILING DATE: 2004-06-22
24 <160> NUMBER OF SEQ ID NOS: 6
26 <170> SOFTWARE: PatentIn version 3.3
28 <210> SEQ ID NO: 1
29 <211> LENGTH: 285
30 <212> TYPE: PRT
31 <213> ORGANISM: Homo sapiens
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39 Arg Gly Thr Ser Ser Gln Pro Asn Glu Ser Ser Gly Ser Ile Asp His
40           20           25           30
43 Gln Thr Ser Val Gln Gln Leu Pro Gly Glu Phe Phe Ser Leu Glu Asn
44           35           40           45
47 Pro Ser Asp Ala Glu Ala Leu Tyr Glu Thr Ser Ser Gly Leu Asn Thr
48           50           55           60
51 Leu Ser Glu His Gly Ser Ser Glu His Gly Ser Ser Lys His Thr Val
52 65           70           75           80
55 Ala Glu His Thr Ser Gly Glu His Ala Glu Ser Glu His Ala Ser Gly
56           85           90           95
59 Glu Pro Ala Ala Thr Glu His Ala Glu Gly Glu His Thr Val Gly Glu
60           100          105          110
63 Gln Pro Ser Gly Glu Gln Pro Ser Gly Glu His Leu Ser Gly Glu Gln
64           115          120          125
67 Pro Leu Ser Glu Leu Glu Ser Gly Glu Gln Pro Ser Asp Glu Gln Pro
68           130          135          140
71 Ser Gly Glu His Gly Ser Gly Glu Gln Pro Ser Gly Glu Gln Ala Ser

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72 145          150          155          160
75 Gly Glu Gln Pro Ser Gly Glu His Ala Ser Gly Glu His Ala Ser Gly
76          165          170          175
79 Glu Gln Ser Leu Gly Glu His Ala Leu Ser Glu Lys Pro Ser Gly Glu
80          180          185          190
83 Gln Ala Ser Gly Ala Pro Ile Ser Ser Thr Ser Thr Gly Thr Ile Leu
84          195          200          205
87 Asn Cys Tyr Thr Cys Ala Tyr Met Asn Asp Gln Gly Lys Cys Leu Arg
88          210          215          220
91 Gly Glu Gly Thr Cys Ile Thr Gln Asn Ser Gln Gln Cys Met Leu Lys
92 225          230          235          240
95 Lys Ile Phe Glu Gly Gly Lys Leu Gln Phe Met Val Gln Gly Cys Glu
96          245          250          255
99 Asn Met Cys Pro Ser Met Asn Leu Phe Ser His Gly Thr Arg Met Gln
100          260          265          270
103 Ile Ile Cys Cys Arg Asn Gln Ser Phe Cys Asn Lys Ile
104          275          280          285
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108 <211> LENGTH: 697
109 <212> TYPE: PRT
110 <213> ORGANISM: Homo sapiens
112 <400> SEQUENCE: 2
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115 1          5          10          15
118 Leu Leu Glu Gly Ile Ser Arg Ala Val Leu Lys Thr Asn Pro Ser Asn
119          20          25          30
122 Ile Asn Gln Phe Ala Ala Ala Tyr Phe Gln Glu Leu Thr Met Tyr Arg
123          35          40          45
126 Gly Asn Thr Thr Met Asp Ile Lys Asp Leu Val Lys Gln Phe His Gln
127          50          55          60
130 Ile Lys Val Glu Lys Trp Ser Glu Gly Thr Thr Pro Gln Lys Lys Leu
131 65          70          75          80
134 Glu Cys Leu Lys Glu Pro Gly Lys Thr Ser Val Glu Ser Lys Val Pro
135          85          90          95
138 Thr Gln Met Glu Lys Ser Thr Asp Thr Asp Glu Asp Asn Val Thr Arg
139          100          105          110
142 Thr Glu Tyr Ser Asp Lys Thr Thr Gln Phe Pro Ser Val Tyr Ala Val
143          115          120          125
146 Pro Gly Thr Glu Gln Thr Glu Ala Val Gly Gly Leu Ser Ser Lys Pro
147          130          135          140
150 Ala Thr Pro Lys Thr Thr Thr Pro Pro Ser Ser Pro Pro Pro Thr Ala
151 145          150          155          160
154 Val Ser Pro Glu Phe Ala Tyr Val Pro Ala Asp Pro Ala Gln Leu Ala
155          165          170          175
158 Ala Gln Met Leu Gly Lys Val Ser Ser Ile His Ser Asp Gln Ser Asp
159          180          185          190
162 Val Leu Met Val Asp Val Ala Thr Ser Met Pro Val Val Ile Lys Glu
163          195          200          205
166 Val Pro Ser Ser Glu Ala Ala Glu Asp Val Met Val Ala Ala Pro Leu

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167      210      215      220
170 Val Cys Ser Gly Lys Val Leu Glu Val Gln Val Val Asn Gln Thr Ser
171 225      230      235      240
174 Val His Val Asp Leu Gly Ser Gln Pro Lys Glu Asn Glu Ala Glu Pro
175      245      250      255
178 Ser Thr Ala Ser Ser Val Pro Leu Gln Asp Glu Gln Glu Pro Pro Ala
179      260      265      270
182 Tyr Asp Gln Ala Pro Glu Val Thr Leu Gln Ala Asp Ile Glu Val Met
183      275      280      285
186 Ser Thr Val His Ile Ser Ser Val Tyr Asn Asp Val Pro Val Thr Glu
187      290      295      300
190 Gly Val Val Tyr Ile Glu Gln Leu Pro Glu Gln Ile Val Ile Pro Phe
191 305      310      315      320
194 Thr Asp Gln Val Ala Cys Leu Lys Glu Asn Glu Gln Ser Lys Glu Asn
195      325      330      335
198 Glu Gln Ser Pro Arg Val Ser Pro Lys Ser Val Val Glu Lys Thr Thr
199      340      345      350
202 Ser Gly Met Ser Lys Lys Ser Val Glu Ser Val Lys Leu Ala Gln Leu
203      355      360      365
206 Glu Glu Asn Ala Lys Tyr Ser Ser Val Tyr Met Glu Ala Glu Ala Thr
207      370      375      380
210 Ala Leu Leu Ser Asp Thr Ser Leu Lys Gly Gln Pro Glu Val Pro Ala
211 385      390      395      400
214 Gln Leu Leu Asp Ala Glu Gly Ala Ile Lys Ile Gly Ser Glu Lys Ser
215      405      410      415
218 Leu His Leu Glu Val Glu Val Thr Ser Ile Val Ser Asp Asn Thr Gly
219      420      425      430
222 Gln Glu Glu Ser Gly Glu Asn Ser Val Pro Gln Glu Met Glu Gly Arg
223      435      440      445
226 Pro Val Leu Ser Gly Glu Ala Ala Glu Ala Val His Ser Gly Thr Ser
227      450      455      460
230 Val Lys Ser Ser Ser Gly Pro Phe Pro Pro Ala Pro Glu Gly Leu Thr
231 465      470      475      480
234 Ala Pro Glu Ile Glu Pro Glu Gly Glu Ser Thr Ala Glu Gly Leu Met
235      485      490      495
238 Lys Pro Ala Met Ala Thr Ser Glu Arg Gly Gln Pro Pro Pro Cys Ser
239      500      505      510
242 Asn Met Trp Thr Leu Tyr Cys Leu Thr Asp Lys Asn Gln Gln Gly His
243      515      520      525
246 Pro Ser Pro Pro Pro Ala Pro Gly Pro Phe Pro Gln Ala Thr Leu Tyr
247      530      535      540
250 Leu Pro Asn Pro Lys Asp Pro Gln Phe Gln Gln His Pro Pro Lys Val
251 545      550      555      560
254 Thr Phe Pro Thr Tyr Val Met Gly Asp Thr Lys Lys Thr Ser Ala Pro
255      565      570      575
258 Pro Phe Ile Leu Val Gly Ser Asn Val Gln Glu Ala Gln Gly Trp Lys
259      580      585      590
262 Pro Leu Pro Gly His Ala Val Val Ser Gln Ser Asp Val Leu Arg Tyr
263      595      600      605

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266 Val Ala Met Gln Val Pro Ile Ala Val Pro Ala Asp Glu Lys Tyr Gln
267      610                      615                      620
270 Lys His Thr Leu Ser Pro Gln Asn Ala Asn Pro Pro Ser Gly Gln Asp
271 625                      630                      635                      640
274 Val Pro Arg Pro Lys Ser Pro Val Phe Leu Ser Val Ala Phe Pro Val
275                      645                      650                      655
278 Glu Asp Val Ala Lys Lys Ser Ser Asp Ser Gly Asp Lys Cys Ala Pro
279                      660                      665                      670
282 Phe Gly Ser Tyr Gly Ile Ala Gly Glu Val Thr Val Thr Thr Ala His
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286 Lys Arg Arg Lys Ala Glu Thr Glu Asn
287      690                      695
290 <210> SEQ ID NO: 3
291 <211> LENGTH: 350
292 <212> TYPE: PRT
293 <213> ORGANISM: Homo sapiens
295 <400> SEQUENCE: 3
297 Met Lys Pro Leu Val Leu Leu Val Ala Leu Leu Leu Trp Pro Ser Ser
298 1                      5                      10                      15
301 Val Pro Ala Tyr Pro Ser Ile Thr Val Thr Pro Asp Glu Glu Gln Asn
302                      20                      25                      30
305 Leu Asn His Tyr Ile Gln Val Leu Glu Asn Leu Val Arg Ser Val Pro
306                      35                      40                      45
309 Ser Gly Glu Pro Gly Arg Glu Lys Lys Ser Asn Ser Pro Lys His Val
310                      50                      55                      60
313 Tyr Ser Ile Ala Ser Lys Gly Ser Lys Phe Lys Glu Leu Val Thr His
314 65                      70                      75                      80
317 Gly Asp Ala Ser Thr Glu Asn Asp Val Leu Thr Asn Pro Ile Ser Glu
318                      85                      90                      95
321 Glu Thr Thr Thr Phe Pro Thr Gly Gly Phe Thr Pro Glu Ile Gly Lys
322                      100                     105                     110
325 Lys Lys His Thr Glu Ser Thr Pro Phe Trp Ser Ile Lys Pro Asn Asn
326                      115                     120                     125
329 Val Ser Ile Val Leu His Ala Glu Glu Pro Tyr Ile Glu Asn Glu Glu
330                      130                     135                     140
333 Pro Glu Pro Glu Pro Glu Pro Ala Ala Lys Gln Thr Glu Ala Pro Arg
334 145                      150                     155                     160
337 Met Leu Pro Val Val Thr Glu Ser Ser Thr Ser Pro Tyr Val Thr Ser
338                      165                     170                     175
341 Tyr Lys Ser Pro Val Thr Thr Leu Asp Lys Ser Thr Gly Ile Glu Ile
342                      180                     185                     190
345 Tyr Thr Glu Ser Glu Asp Val Pro Gln Leu Ser Gly Glu Thr Ala Ile
346                      195                     200                     205
349 Glu Lys Pro Glu Glu Phe Gly Lys His Pro Glu Ser Trp Asn Asn Asp
350                      210                     215                     220
353 Asp Ile Leu Lys Lys Ile Leu Asp Ile Asn Ser Gln Val Gln Gln Ala
354 225                      230                     235                     240
357 Leu Leu Ser Asp Thr Ser Asn Pro Ala Tyr Arg Glu Asp Ile Glu Ala
358                      245                     250                     255

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Input Set : A:\00952-04,Herr-Paint Seq. Listing.U.S.ST25.txt

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361 Ser Lys Asp His Leu Lys Pro Ser Leu Ala Leu Ala Ala Ala Glu
362          260          265          270
365 His Lys Leu Lys Thr Met Tyr Lys Ser Gln Leu Leu Pro Val Gly Arg
366          275          280          285
369 Thr Ser Asn Lys Ile Asp Asp Ile Val Thr Val Ile Asn Met Leu Cys
370          290          295          300
373 Asn Ser Arg Ser Lys Leu Tyr Glu Tyr Leu Asp Ile Lys Cys Val Pro
374 305          310          315          320
377 Pro Glu Met Arg Glu Lys Ala Ala Thr Val Phe Asn Thr Leu Lys Asn
378          325          330          335
381 Met Cys Arg Ser Arg Arg Val Thr Ala Leu Leu Lys Val Tyr
382          340          345          350
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386 <211> LENGTH: 294
387 <212> TYPE: PRT
388 <213> ORGANISM: Homo sapiens
390 <400> SEQUENCE: 4
392 Met Ser Pro Arg Gly Thr Gly Cys Ser Ala Gly Leu Leu Met Thr Val
393 1          5          10          15
396 Gly Trp Leu Leu Leu Ala Gly Leu Gln Ser Ala Arg Gly Thr Asn Val
397          20          25          30
400 Thr Ala Ala Val Gln Asp Ala Gly Leu Ala His Glu Gly Glu Gly Glu
401          35          40          45
404 Glu Glu Thr Glu Asn Asn Asp Ser Glu Thr Ala Glu Asn Tyr Ala Pro
405          50          55          60
408 Pro Glu Thr Glu Asp Val Ser Asn Arg Asn Val Val Lys Glu Val Glu
409 65          70          75          80
412 Phe Gly Met Cys Thr Val Thr Cys Gly Ile Gly Val Arg Glu Val Ile
413          85          90          95
416 Leu Thr Asn Gly Cys Pro Gly Gly Glu Ser Lys Cys Val Val Arg Val
417          100         105         110
420 Glu Glu Cys Arg Gly Pro Thr Asp Cys Gly Trp Gly Lys Pro Ile Ser
421          115         120         125
424 Glu Ser Leu Glu Ser Val Arg Leu Ala Cys Ile His Thr Ser Pro Leu
425          130         135         140
428 Asn Arg Phe Lys Tyr Met Trp Lys Leu Leu Arg Gln Asp Gln Gln Ser
429 145         150         155         160
432 Ile Ile Leu Val Asn Asp Ser Ala Ile Leu Glu Val Arg Lys Glu Ser
433          165         170         175
436 His Pro Leu Ala Phe Glu Cys Asp Thr Leu Asp Asn Asn Glu Ile Val
437          180         185         190
440 Ala Thr Ile Lys Phe Thr Val Tyr Thr Ser Ser Glu Leu Gln Met Arg
441          195         200         205
444 Arg Ser Ser Leu Pro Ala Thr Asp Ala Ala Leu Ile Phe Val Leu Thr
445          210         215         220
448 Ile Gly Val Ile Ile Cys Val Phe Ile Ile Phe Leu Leu Ile Phe Ile
449 225         230         235         240
452 Ile Ile Asn Trp Ala Ala Val Lys Ala Phe Trp Gly Ala Lys Ala Ser
453          245         250         255

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**VERIFICATION SUMMARY**

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Input Set : A:\00952-04,Herr-Paint Seq. Listing.U.S.ST25.txt

Output Set: N:\CRF4\08172006\J588445.raw

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L:15 M:271 C: Current Filing Date differs, Replaced Current Filing Date